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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,508	12/05/2003	Annette C. Grot	10004289-1	1969

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EXAMINER

ROSENBERGER, RICHARD A

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,508

Applicant(s)

GROT ET AL.

Examiner

Richard A. Rosenberger

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 9-14, 16, 18-23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/05/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

1. Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is written to claim “a second input optical arrangement” and “a second output optical arrangement”. The disclosure to support this appears to be only that the input (and corresponding output) optics can be varied to vary the angle; see the specification, paragraph [0050] beginning on page 13, and the last sentence in paragraph [0057] on page 16. Claiming such a change in the angle of incidence as “a second input optical arrangement” and “a second output optical arrangement” is at best unclear; the most reasonable reading of the current language appears to be that there are two sets of input and output optics, for which there appears to be inadequate disclosure. Claim 8 inherits this rejection from its parent claim 7.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawyers et al (US 4,828,387).

Claim 1 identifies the claimed structure as an “optical wavelength standard”; the structure claimed however does not limit the structure to a “wavelength standard”, nor is the claimed structure specifically limited in a way which makes it particularly suited for such a use. Thus preamble language calling the claimed structure a wavelength standard is non-limiting.

The sawyers et al reference shows a structure comprising a diffraction grating (24) with an input optical arrangement (10, 14, 16, 18, 20) to illuminate the diffractive surface at a wavelength and angle which will generate surface plasmons, and an output optical arrangement (26, 28, 30) which is located to receive the light from the grating surface, with the detected light including a plasmon absorption line.

As in claim 2, the grating comprises metal; see for example, column 2, lines 59-63.

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyers et al in view of Hoppe et al (US 6,570,657).

See above for a discussion of the Sawyers et al reference.

Claim 3 calls for “an auxiliary light source”, but the claim does not call for any other light sources; the “input optical arrangement” of claim 1 does not explicitly include a claimed light source, and thus the “auxiliary light source” of claim 3 reads on the light source 10 of the Sawyers et al reference.

The Sawyers et al reference does not show suing optical fibers to direct light to and form the grating (24). It is known in the art that fibers and focusing elements can be used to direct light to and from a surface plasmon sensor; see fibers 31 and 32 and lenses 41 and 42 of Hoppe et al. It would have been obvious to use fibers in such a known manner in the device of Sawyers et al to achieve the art-recognized benefits of such fiber usage.

Sawyers et al teaches that the light can be polarized (column 1, lines 66-68); this at least clearly suggests including polarizers as in claims 4 and 5.

6. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karube et al (US 2003/0113231) and Sawyers et al (US 4,828,287).

Karube et al shows calibrating a surface plasmon system by providing a reference area on the plasmon generating surface which is not influenced by the material being measured, and thus allows the absorption wavelength of the plasmons generated in that reference area to serve as a wavelength standard; see figure 9, which shows the direct association of the absorption line at the reference surface and the wavelength.

Karube et al shows a particular known surface plasmon generating and measuring means different from the known grating-based plasmon generating structures such as in claim 15. As shown be, for example Sawyers et al, such grating based plasmon measuring arrangements are known in the art; It would have been obvious to include a reference area such as taught by Karube et al in other types of plasmon-based measuring systems, including the grating-based system such as shown by Sawyers et al, because the disclosed benefits of providing the reference area does not depend upon the exact form that the plasmon generating surface takes, but would be, and would be recognized as being, useful in the same manner with other plasmon-generating surfaces.

7. Claims 7 and 8, as understood, appear to contain allowable subject matter (see, however, the rejection under 35 USC 112 above). The art does not appear to teach or suggest changing the angle of incidence of the light in a system as otherwise claimed. Claim 9-14, 16 and 18-23 also appear to contain allowable subject matter. The art does not appear to teach or suggest generating a control signal as in claims 9 and 12, or the steps to change the wavelength as in claim 16 or setting the wavelength as in claim 18. Claims 10, 11, 13, 14 and 19-23 are all dependent from one of these claims, and thus contain allowable subject matter for at least the reasons that these claims do.

Claims 9-14, 16 and 19-23 are objected to as being dependent from or referring to unallowed claims, but would be allowable were they rewritten in independent form

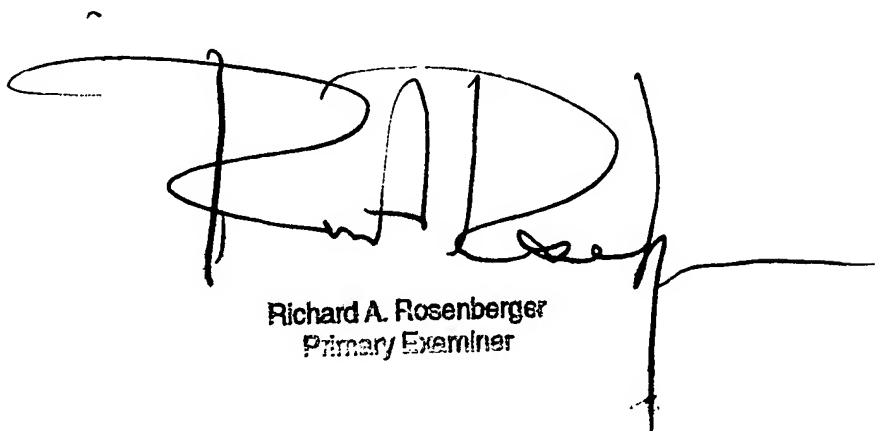
Art Unit: 2877

including all of the limitations of the claims form which they depend of to which they refer. Claims 7 and 8, would also be allowable were the rejection under 35 USC 112 above overcome and those claims rewritten in independent form including all of the limitations of their parent claim.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A Rosenberger whose telephone number is (571) 272-2428. The examiner can normally be reached on Monday through Friday during the hours of 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. A. Rosenberger
8 March 2006



Richard A. Rosenberger
Primary Examiner